

PROPOSED PROGRAM FOR PHASE II

(Theoretical Investigations)

I. Introduction

In addition to the planned literature and patent search which was required during the first phase of three months, some preliminary measurements on CGW materials showed their definite applicability for rear view screens if certain modifications are made. These results, together with the theoretical information acquired during the first phase, enable us now to concentrate our theoretical investigations only on these parameters which are important to evaluate the various types of material. The second phase of this program will also include the preparation of some instrumentation set ups and preliminary experimental work on selected materials. A more detailed outlined is given in the following paragraphs.

II. Theoretical

A. Scattering

Because of the importance of the scattering distribution and its dependence upon particle size, scattering theory will be employed to specify the size of scattering centers in preliminary rear projection screen materials.

B. Resolution

This will be an analytical study of physical factors, such as particle size, screen thickness, scattering characteristics, etc., which degrade resolution.

C. Analysis of Projection Systems

To better understand the influence of system requirements on performance, we will investigate the sensitivity of different projection systems to changes in system parameters, such as ambient light, screen gain, bend angles, projection distances, etc.

III. Instrumentation

Instrumentation will be designed and constructed to measure the following parameters:

1. The angular scattering distribution.
2. The modulation transfer function which is a measure of the resolution of the screen.
3. The color characteristics of the screen.

IV. Materials Investigations

We will continue investigating CGW materials and working with our materials groups towards specifying requirements for preliminary samples of rear projection screen materials which have been discussed in Technical Report Section IV, concluding Phase I of the program.